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d his

     (FILE 'HOME' ENTERED AT 14:07:19 ON 14 JUL 1998)

     FILE 'REGISTRY' ENTERED AT 14:07:24 ON 14 JUL 1998
L1             1 S TACGCTTCTACTAATCCATGTTCTGAGAAATCATCCAGTCTGCCCA/SQSN

     FILE 'CA' ENTERED AT 14:09:55 ON 14 JUL 1998
L2             0 S L1

     FILE 'REGISTRY' ENTERED AT 14:10:04 ON 14 JUL 1998

     FILE 'GENBANK' ENTERED AT 14:10:19 ON 14 JUL 1998
L3             1 S L1

     FILE 'MEDLINE' ENTERED AT 14:11:33 ON 14 JUL 1998
                 E YOON J-B/AU
                 E YOON J B/AU
L4            17 S E3
                 E BERRY S A/AU
L5            64 S E3
L6             3 S L4 AND L5
L7             1 S SPI-GLE
L8          4134 S LACTOGEN?
L9            28 S L8 AND ENHANCER
L10            6 S GHRE
L11            0 S L9 AND L10
L12        33925 S PROLACTIN
L13        36672 S L8 OR L12
L14           90 S L13 AND ENHANCER
L15            0 S L14 AND SPI
L16            0 S L14 AND SP
L17            0 S GROWTH HORMONE RESPONSIVE ELEMENT
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L10 ANSWER 5 OF 6 MEDLINE

94342339 Document Number: 94342339. cis-Acting elements controlling transcription from rat serine protease inhibitor 2.1 gene promoter. Characterization of two growth hormone response sites and a dominant purine-rich element. Le Cam A; Pantescu V; Paquereau L; Legraverend C; Fauconnier G; Asins G. (Centre de Pharmacologie Endocrinologie, INSERM U376, Montpellier, France.. )JOURNAL OF BIOLOGICAL CHEMISTRY, (1994 Aug 26) 269 (34) 21532-9. Journal code: HIV. ISSN: 0021-9258. Pub. country: United States. Language: English.

AB The cis-acting elements that are functionally important for the basal, the growth hormone (GH), and the glucocorticoid hormone (GC) regulation of expression of the rat serine protease inhibitor 2.1 gene (spi 2.1) were mapped. Normal rat hepatocytes were transiently transfected with constructs harboring deleted or mutated versions of the spi 2.1 proximal promoter region fused to the chloramphenicol acetyltransferase gene. A purine-rich sequence (GAGA box, nucleotides -57 to -45), whose mutation or deletion almost completely knocks out both basal and hormone-stimulated promoter activities, plays the role of a key control element. A positive GC response element, spanning nucleotides -88 to -74, confers GC responsiveness to a heterologous promoter. Two structurally unrelated GH-response elements (**GHRE**) were identified. **GHRE**-II (nucleotides -136 to -104) contains a CCAAT enhancer binding protein binding site whose mutation completely abolishes its GH-dependent enhancer function. **GHRE**-I, which spans nucleotides -61 to +8, is not an enhancer element. Its GH-dependent activity depends on the preservation of the distance separating the GAGA box and elements of the basic transcriptional machinery. Taken together, these results have revealed the existence of an apparently new type of promoter functioning that strictly depends on the integrity of a key regulatory (G + A) motif.

Document Number: 87040731. Transcriptional **enhancer** within the human placental **lactogen** and growth hormone multigene cluster. Rogers B L; Sobnosky M G; Saunders G F. NUCLEIC ACIDS RESEARCH, (1986 Oct 10) 14 (19) 7647-59. Journal code: O8L. ISSN: 0305-1048. Pub. country: ENGLAND: United Kingdom. Language: English.

AB Human placental **lactogen** (hPL) and human growth hormone (hGH) are members of a multigene family that share amino acid sequence homology and similarity in gene structure and nucleotide sequence, but differ in both function and expression. To determine the sequence requirements for tissue specific expression recombinant plasmids containing the members of the hPL-hGH multigene family and flanking regions were analyzed by both transient and stable transfection assays. We have identified a transcriptional **enhancer** in a 1.0 kb region located 2.0 kb downstream of the hPL3 structural gene. This **enhancer** sequence is not strictly cell-type specific since it functions in cell lines of both placental (JEG-3) and pituitary (18-54,SF) origin. However, its efficiency is several fold higher in placental cells than in pituitar

(FILE 'HOME' ENTERED AT 16:09:34 ON 06 JUL 1998)

FILE 'REGISTRY' ENTERED AT 16:09:39 ON 06 JUL 1998

L1 0 S TTCTGAGAA
L2 1 S TTCTGAGAA/SQEN
L3 13593 S TTCTGAGAA/SQSN

FILE 'CA' ENTERED AT 16:17:27 ON 06 JUL 1998

L4 2 S L2
L5 2047 S L3
L6 62 S ENHANCER# AND L5
L7 1 S SERINE PROTEASE INHIBITOR AND L6

(FILE 'HOME' ENTERED AT 16:09:34 ON 06 JUL 1998)

FILE 'REGISTRY' ENTERED AT 16:09:39 ON 06 JUL 1998

L1 0 S TTCTGAGAA
L2 1 S TTCTGAGAA/SQEN
L3 13593 S TTCTGAGAA/SQSN

FILE 'CA' ENTERED AT 16:17:27 ON 06 JUL 1998

L4 2 S L2
L5 2047 S L3
L6 62 S ENHANCER# AND L5
L7 1 S SERINE PROTEASE INHIBITOR AND L6
L8 95 S TRANSGEN? AND L5
L9 1 S L8 AND MAMMARY

An inducible nuclear factor binds to a growth hormone-regulated gene. **Yoon J B; Berry S A;** Seelig S; Towle H C. (Department of Pediatrics, University of Minnesota, Minneapolis 55455.. )JOURNAL OF BIOLOGICAL CHEMISTRY, (1990 Nov 15) 265 (32) 19947-54. Journal code: HIV. ISSN: 0021-9258. Pub. country: United States. Language: English.

AB Transcription of the serine protease inhibitor (Spi) 2.1 gene, a member of the serine protease inhibitor family, is induced by growth hormone (GH) in rat liver. To further study the mechanism involved in this process, we have isolated and characterized the Spi 2.1 gene from a rat genomic library. Examination of the 5'-flanking region of the Spi 2.1 gene from normal animals revealed the presence of a DNase I hypersensitive site within 500 base pairs of the transcriptional initiation site, which was not detectable in hypophysectomized animals. Portions of the 5'-flanking region of the Spi 2.1 gene were fused to a heterologous promoter and reporter gene and introduced into primary rat hepatocytes by lipofection. Spi 2.1 sequences from -275 to -54 gave a 2-3-fold induction of reporter gene activity in cells grown in the presence of GH, similar to the level of induction of the endogenous Spi 2.1 mRNA in isolated hepatocytes. Further definition of the essential sequences revealed that a segment from -147 to -102 could confer GH responsiveness when linked in tandem copies in front of a heterologous promoter. Using the gel shift assay, a nuclear factor(s) from normal rat liver was identified which could interact with this minimal response fragment. The importance of this activity to GH regulation was suggested by the fact that it was absent in hypophysectomized animals but reappeared by 1 h after treatment of such animals with GH. The appearance of this activity was not blocked by pretreatment of animals with an inhibitor of protein synthesis, suggesting a preexisting factor is modified by GH to yield an activity which interacts with the Spi 2.1 gene.

L3 ANSWER 1 OF 1 GENBANK.RTM. COPYRIGHT 1998

LOCUS (LOC): RNSPI1G GenBank (R)
GenBank ACC. NO. (GBN): X16360
CAS REGISTRY NO. (RN): **140334-54-9**
SEQUENCE LENGTH (SQL): 1018
MOLECULE TYPE (CI): DNA; linear
DIVISION CODE (CI): Rodents
DATE (DATE): 21 Jan 1991
DEFINITION (DEF): Rat SPI-1 serine protease inhibitor gene 5' flanking region.
KEYWORDS (ST): serine protease inhibitor
SOURCE: Norway rat.
ORGANISM (ORGN): Rattus norvegicus
Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata; Vertebrata; Eutheria; Rodentia; Sciurognathi; Myomorpha; Muridae; Murinae; Rattus
NUCLEIC ACID COUNT (NA): 286 a 178 c 219 g 335 t
COMMENT:
See X16357 for SPI-1 cDNA.
REFERENCE: 1 (bases 1 to 1018)
AUTHOR (AU): le Cam,A.
TITLE (TI): Direct Submission
JOURNAL (SO): Submitted (25-AUG-1989) Le Cam A., C C I P E INSERM - CNRS, Rue de La Cardonille, 34094 Montpellier 2, France
REFERENCE: 2 (bases 1 to 1018)
AUTHOR (AU): Pages,G.; Rouayrenc,J.F.; Rossi,V.; Le Cam,G.; Mariller,M.; Szpirer,J.; Szpirer,C.; Levan,G.; Le Cam,A.
TITLE (TI): Primary structure and assignment to chromosome 6 of three related rat genes encoding liver serine protease inhibitors
JOURNAL (SO): Gene, 94 (2), 273-282 (1990)
OTHER SOURCE (OS): CA 114:137109

FEATURES (FEAT):

| Feature Key | Location | Qualifier |
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| | | /dev-stage="adult" |
| | | /tissue-type="liver" |
| | | /cell-type="hepatocyte" |
| promoter | 985..992 | /note="TATA-box" |
| misc-feature | 1018 | /note="CAP site" |

SEQUENCE (SEQ):

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   121 aaaactatga atcaagcaaa accttcttcg ctcactggat cctctcaaat cattcagttt
   181 gattccattg atcaacatgc ctgtcttcat gccaacgcca tggaggttta ttactattgt
   241 tttgtcacgt agctttaaat cagggatatt agtacctcaa gtccttttat ggcacaagat
   301 ttttatacct gtactgggtg ggagtttttc catatgaagt tgggaattgc tctttcaagg
   361 cctgtaaaga gttgtgttgg aattttaaag agattggttt gaatatgtag ataggcattg
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   541 catttcctgg ctaggttaaa gttaatccaa gatattatat attattttgg ctattgtgaa
   601 gatgttgttt ctgtaatttc tttctttgcc catttaatat ttgtataaag gagggctatt
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661 tgtttgaatt ttttgtttgt gttttagttg gtttttagtg ttcattttga aatgatttat
721 ccaatggagg aaaaatgtaa gcttacagac ctgctgggac acaagtaagg cagactttgt
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841 ataaaaggtg tgctcaggag atcagtacgc ttctactaat ccatgttctg agaaatcatc
901 cagtctgccc atatgtaatc tgaacacaaa gcacaggttg tccgaggcaa catttcctaa

Growth hormone specifically regulates **serine protease inhibitor** gene transcription via interferon-.gamma.-activated sequence-like DNA elements. Sliva, Daniel; Wood, Timothy J. J.; Schindler, Chris; Lobie, Peter E.; Norstedt, Gunnar (Center Biotechnology, Karolinska Inst., Huddinge, 141 57, Swed.). J. Biol. Chem., 269(42), 26208-14 (English) 1994. CODEN: JBCHA3. ISSN: 0021-9258.

AB Growth hormone activates gene transcription of the serine protease inhibitors (SPI) 2.1 and 2.2 by an unknown mechanism. In order to define the promoter regions responsible for this effect and to characterize the transcription factors involved, we have performed gel electrophoresis mobility shift assays on nuclear exts. from cells lines transfected with growth hormone receptor cDNA. We have identified an 9-base pair DNA element, the SPI-GLE 1, which forms a complex with nuclear proteins following activation by growth hormone and which, when placed upstream of a minimal thymidine kinase promoter, drives chloramphenicol acetyltransferase expression in a growth hormone-dependent fashion. This element is similar to those from several genes regulated by other cytokines including interferon. The growth hormone-induced complexes formed where dependent on tyrosine phosphorylation but did not contain the interferon-.gamma.-activated transcription factor Stat 91. Competition studies with oligonucleotides similar to the SPI-GLE 1 reveal the sequence of a consensus element that specifically binds growth hormone-regulated nuclear